

REMARKS

The present application was filed on September 22, 2000 with claims 1 through 33. Claims 1 through 33 are presently pending in the above-identified patent application.

In the Office Action, the Examiner rejected claims 1, 3, 16-18, 21, 31, and 32 under 5 35 U.S.C. §102(e) as being anticipated by Park et al. (United States Patent Publication Number 2002/0036993 A1), rejected claims 1, 3-4, 7, 10, 16-18, 21, 23, 26, 31, and 32 under 35 U.S.C. §102(e) as being anticipated by Ludwig et al. (United States Patent Publication Number 2004/0039833 A1), and rejected claims 5-6, 8-9, and 24-25 under 35 U.S.C. §103(a) as being unpatentable over Ludwig et al. The Examiner indicated that claims 2, 11-15, 19-20, 22, 27-30, and 10 33 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

The present invention is directed to a radio link protocol (RLP)/point-to-point protocol (PPP) design for wireless multimedia packet networks that passes corrupted packet data and error location information among OSI layers. The RLP layer provides erasure data frames and 15 optionally error location indicators to the PPP layer. When the PPP layer has access to the erasure data frames, the data frames can be padded with a predefined value, such as all zeroes "0" to prevent error propagation from one data frame (or octet) to the following data frames (or octets). When the PPP layer has access to the error location information, the PPP layer can detect if the PPP packet header is corrupted. When a valid header is detected, the PPP layer forwards the packet payload to 20 the higher layers (TCP, UDP) whether or not the payload is properly received. Thus, the application has access to all the usable information, so the application can determine whether and how to utilize the information. The RLP/PPP design of the present invention allows packets with partially corrupted payloads to still be forwarded to the UDP layer and then to the application layer.

Independent Claims 1, 7, 16, 21, 23 and 31

25 Independent claims 1, 16, 21, and 31 were rejected under 35 U.S.C. §102(e) as being anticipated by Park et al. and claims 1, 7, 16, 21, 23, and 31 were rejected under 35 U.S.C. §102(e) as being anticipated by Ludwig et al.

Regarding claims 1, 16, 21, and 31, the Examiner asserts that Park teaches that, if there is some error, a blank data block (erasure data frame) is transmitted to the upper 30 layer...(forwarding erasure data frames with said multimedia data to a PPP layer). The Examiner

also asserts that Ludwig discloses that “packets of the unnumbered mode will be released to the next higher layer regardless if a delimiter has been received or not. Herein, as illustrated in FIG. 6, the next higher layer is PPP Layer...(forwarding erasure data frames with multimedia data to a PPP layer).”

5 Applicants note that, as the Examiner acknowledges, Park teaches that a *blank* data block is transmitted to the upper layer. Thus, Park does not suggest or disclose forwarding erasure data frames with *multimedia data* to a PPP layer, replacing said *erasure data frames* with a *predefined binary value*, or processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers.

10 Applicants also note that Ludwig teaches that “the IP datagram is passed to the link layer, where a header associated with the link layer protocol (LLP), e.g. the Point-to-Point Protocol (PPP), is added. The resulting packet is often called a *frame*.” (Paragraph 7; emphasis added.) Ludwig then teaches that the frame also receives a start flag and an end flag. The PPP level packet or frame does not, however, include the start flag or the stop flag. If a start flag or stop flag is
 15 corrupted, the PPP frame is *not* corrupted since the flag(s) are not part of the frame. Thus, the frames that are associated with corrupted start or stop flags are *not erasure frames* since the frames have no errors. Since frames with corrupted start or stop flags are not erasure frames, Ludwig does not suggest or disclose forwarding erasure data frames with *multimedia data* to a PPP layer. Ludwig also does not disclose or suggest replacing said *erasure data frames* with a *predefined binary value*,
 20 or processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers.

Independent claims 1 and 21 require forwarding *erasure data frames* with said *multimedia data* to a Point-to-Point Protocol (PPP) layer, independent claims 7 and 23 require replacing said *erasure data frames* with a *predefined binary value*, and independent claims 16 and 31
 25 require processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers.

Thus, Park et al. or Ludwig et al., alone or in combination, do not disclose or suggest forwarding *erasure data frames* with said *multimedia data* to a Point-to-Point Protocol (PPP) layer, as required by independent claims 1 and 21, do not disclose or suggest replacing said *erasure data*
 30 *frames* with a *predefined binary value*, as required by independent claims 7 and 23, and do not

disclose or suggest processing said multimedia data to determine if said multimedia data is properly received; and communicating *error information* between said RLP and UDP layers, as required by independent claims 16 and 31.

Dependent Claims 2-6, 8-15, 17-20, 22, 24-30 and 32-33

5 Dependent claims 3, 17-18, and 32 were rejected under 35 U.S.C. §102(e) as being anticipated by Park et al., claims 3-4, 10, 17-18, 26, and 32 were rejected under 35 U.S.C. §102(e) as being anticipated by Ludwig et al., and claims 5-6, 8-9, and 24-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ludwig et al.

10 Claims 2-6, 8-15, 17-20, 22, 24-30 and 32-33 are dependent on claims 1, 7, 16, 21, 23, and 31, respectively, and are therefore patentably distinguished over Park et al. and Ludwig et al. (alone or in combination) because of their dependency from independent claims 1, 7, 16, 21, 23, and 31 for the reasons set forth above, as well as other elements these claims add in combination to their base claim. The Examiner has already indicated that claims 2, 11-15, 19-20, 22, 27-30, and 33 would be allowable if rewritten in independent form including all of the limitations of the base
15 claims and any intervening claims.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

20 Respectfully submitted,



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